

### C. HORIZONTAL AND VERTICAL CONTROL *See also H-Cell Report*

The NOAA station in Port Fourchon, LA (8762075) and the SAIC installed Texas Gas Platform (8763535) were the sources for verified water level heights for H11784 (Sheet B) Terrebonne Bay, Louisiana Debris Mapping survey. The final zoning for this project was revised from the preliminary zoning provided by NOAA. For more details on the final zoning, see the Horizontal and Vertical Control Report\* (SAIC doc 09-TR-015).

#### **Concur**

Final water level files for each tide zone were created from verified tide data using the **SABER Create Water Level Files** tool. Water level files contained water level heights that were algebraically subtracted from depths to correct the sounding for tides and water levels. These water level files were applied to the bathymetry data using the **SABER Apply Tides** program within the **SABER** software.

When it was necessary to apply updated tide correctors to the GSF files, the program removed the previous tide corrector and applied the new corrector. Each time a routine was run on the GSF data file, a history record was appended to the end of the GSF file. For quality assurance, the **SABER Check Tides** program was run on all GSF files to confirm that the appropriate water level corrector had been applied to the GSF file.

After confirmation that verified water levels were applied to all bathymetry data, grids were created and analyzed using various color change intervals. The color intervals provided a means to check for significant, unnatural changes in depth across zone boundaries due to water level correction errors, unusual currents, storm surges, etc.

The primary means for analyzing the adequacy of zoning was observing zone boundary crossings in the navigated swath editor, SAIC's **MVE**. In addition, crossline analysis using SAIC's **Junction Analysis** software was used to identify possible depth discrepancies resulting from the applied water level corrector. Discrepancies were further analyzed to determine if they were the result of incorrect zoning parameters or weather (wind) conditions between the tide station and the survey area. Please refer to the Data Acquisition and Processing Report\* (SAIC Doc 09-TR-014) for details on analyses performed. The final tidal zoning applied to H11784 is found in Table C-1.

Table C-1. Water Level Zoning Parameters Applied on Sheet H11784

Zone	Time Corrector (hours:minutes)	Range Ratio	Reference Station
FPtFn750	00:00	1.0800	8762075
FPtFn749	00:06	1.1400	8762075
FTxGs005	-00:06	0.9600	8763535

***\*Included with H-Cell deliverables.***

The survey data for sheet H11784 were collected in horizontal datum NAD-83, using geodetic coordinates, while data display and products used the UTM Zone 15 projection. The following equipment was used for positioning on the *M/V Sea Beneath*:

- TSS POS/MV, Serial Number 2048 with a Trimble Probeacon Differential Receiver (primary sensor)
- Trimble DSM132 (secondary sensor for comparison with Primary)

The following equipment was used for positioning on the *F/V Lacey Marie*:

- TSS POS/MV, Serial Number 2575
- Trimble 4000 DSi GPS Receiver, Serial Number 3504A09516

Differential correctors used for online data were from the U.S. Coast Guard Stations at English Turn, LA and Mobile Point, AL. The differential receiver was set to only receive data from these two corrector stations. ***Concur***

Daily position confidence checks were conducted using the independent Trimble DGPS. A real-time **ISS-2000** survey monitor also raised an alarm to alert the survey watch if the position differences exceeded the maximum allowable distance. All positioning confidence checks were within an inverse distance of five meters.

Please refer to the Horizontal and Vertical Control Report\* (SAIC Doc 09-TR-015) for detailed descriptions of the procedures and systems used to attain hydrographic positioning. This report is included with this H11784 delivery.

***\*Included with H-Cell deliverables.***